

ABSTRACT OF THE DISCLOSURE

Provided is a photodetector that detects missile launches from an above-flying surveillance platform through clouds. The plume detector includes a passive electro-optical sensor which detects the narrow spectral emissions in a rocket engine plume during launch thereof. By detecting a launch upon rocket engine ignition, despite a cloud layer, a gain of up to thirty seconds or more of launch warning is realized and the location of the launch can be accurately determined and the trajectory of such rocket more accurately plotted for enhanced response to such launch. The plume detector of the invention can be carried on a platform such as an aircraft or an orbiting satellite. In each case such detector can spectrally isolate the narrow spectral emissions of interest of a missile or other rocket, as it is launched, for faster tracking and response.